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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,702	10/19/2000	Christer Fahraeus	0460/63413/N	3982

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EXAMINER

CHEN, WENPENG

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 05/19/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/673,702

Applicant(s)

FAHRAEUS ET AL.

Examiner

Wenpeng Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-47 is/are pending in the application.  
4a) Of the above claim(s) 2 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 3-47 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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**Examiner's responses to Applicant's remark**

1. Applicant's arguments filed on 2/27/2004 with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection due to the Applicant's amendments.

2. The amendments overcome the objections to Claims 4-18 based on improper multiple dependence set forth in paper #5.

3. Although the US patent 6,563,951 is properly incorporated, Swedish Patent Application No. 9704924-1 is still improperly incorporated, because the present application does not claim any priority on the Swedish Patent.

**Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 3-11, 13-15, 19-26, 29-39, 41-43, and 47 are rejected under 35 U.S.C. § 103 as being unpatentable over Perona et al. (US patent 6,044,165) in view of Taguchi et al. (US patent 5,748,808 cited previously.)

Perona teaches a device for recording hand-written information in the form of characters, symbols, and calligraphy defined by a hand movement comprising:

- recording means to generate trace of hand-written information and store a description in digital format of how a pen's movement generates the hand-written information; (column 3, line 27 to column 4, line 30; column 8, lines 12-54)

- wherein said description comprises turning indications, indicating how the recording means have been turned between the recording of two images; (column 8, lines 33-44; The curvature and points with velocity below a threshold contain turning indications.)

- wherein the device determines the speed at which the recording means have been moved between the recording of two images; (column 1, lines 35-45; column 8, lines 33-44; The velocity contains a x speed and y speed.)

- wherein said device is adapted to compare the speed with pre-recorded speed data for checking the authenticity of the inputted information; (column 1, lines 35-45; one of criteria for signature verification is speed.)

- wherein the hand-written information comprises characters and wherein the image-processing means are further adapted to identify the characters with the aid of the description in digital format and to store the identified characters in character-coded format. (column 1, lines 35-45; column 3, lines 47-65; units 140 and 150 of Fig. 1; The text displayed after recognition is in character-coded format.)

However, Perona does not teach the features related to (1) the recited recording means to record a plurality of images with partially overlapping contents and (2) the recited image processing means to determine the relative positions of the images with the aid of the partially overlapping contents.

Taguchi teaches a device for recording hand-written information in the form of characters, symbols, and calligraphy defined by a hand movement comprising:

-- recording means which are adapted to be moved by a hand which carried out the hand movement and to record a plurality of images with partially overlapping contents while the recording means are being moved; (Figs. 1-4; column 13, line 50 to column 14, line 54; Images are overlapped in cells, acts, scenes as shown in Figs. 3, 6, 13, 16-17. Component 1 of Fig. 1 is the recording means.)

-- image processing means which are adapted to determine the relative positions of the images with the aid of the partially overlapping contents for providing a description in digital format of how the recording means have been moved, wherein the description includes movement vectors; (Figs. 1-4; column 13, line 50 to column 14, line 54; column 14, lines 31-37; column 18, lines 1-16; column 21, lines 11-38 and 49-58; Component 10 of Fig. 1 is the image processing means. For example, the positional relationship between two continuous cells is a movement vector because it indicates how a cell is moved relative to a previous cell.)

-- wherein the description comprises a plurality of movement vectors each indicating how the recording means have been moves between the recording of two images; (column 14, lines 31-37; column 18, lines 1-16; column 21, lines 11-38 and 49-58; Movement vectors between

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cells, acts or scenes are detected. Each vector corresponds to two images of cells, acts or scenes as explained above.)

-- wherein said description comprises turning indications, indicating how the recording means have been turned between the recording of two images; (Figs. 3-4 and 16-17 show that the movement vectors indicate the turning of the hand-writing device.)

-- wherein said device has light-sensitive sensor means with a two-dimensional sensor surface recording the images; (column 13, lines 50-67; the area CCD sensor 4)

-- wherein said image-processing means are adapted to determine the relative position of the images both horizontally and vertically; (column 15, lines 15-40; The positional relationship is determined in both x and y directions.)

-- wherein the recording means are adapted to be directed, while being moved, at a surface which is imaged with the aid of said plurality of images; (column 11, lines 43-60; The recording means is moved on the top of a paper.)

-- tracing means for indicating on the surface the movement of the recording means; (The parts including lead 2 of Fig. 2 is a tracing means.)

-- wherein the recording means and the image-processing means are arranged in a common casing which adapted to be moved by the hand carrying out the hand movement; (Fig. 2)

-- wherein the recording means are arranged a first casing and the image processing means in a second casing; (column 12, lines 1-4)

-- wherein the image-processing means comprise a processor device; (microcomputer 5 of Fig. 1)

-- display means for reproducing the hand-written information based on the description of how the recording means have moved. (column 12, lines 5-15; Figs. 1 and 8)

It is desirable to have a system that can verify hand-written information including a signature and also can display the captured image of hand-written contents to facilitate human interaction and verification. Because the separation of the pen and camera as shown in Fig. 1, Perona's system cannot generate the image of the hand-written contents in a clean fashion without showing the image of the hand that writes the contents as pointed out by Taguchi in column 1, lines 37-47. It would have been obvious to one of ordinary skill in the art, at the time of the invention, at least to replace Perona's pen 104 and camera 100 with Taguchi's recording means (in Fig. 2 of Taguchi) because the combination provides a better displaying capability of a captured image of hand-written contents. Because the information associated with image of hand-written contents captured by Taguchi's recording means is subsequently analyzed by Perona's system, the combination thus teaches:

-- wherein said device is adapted to determine, on the basis of the overlapping contents of the images, the speed at which the recording means have been moved between the recording of two images;

-- wherein said device is adapted to compare the speed with pre-recorded speed data for checking the authenticity of the inputted information;

-- wherein the hand-written information comprises characters and wherein the image-processing means are further adapted to identify the characters with the aid of the description in digital format and to store the identified characters in character-coded format.

The above passages of Perona and Taguchi also teach the corresponding methods of Claims 19-21, 23-26 and 29 and the corresponding devices of Claims 30-39, 41-43, and 47.

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6. Claims 12 and 40 are rejected under 35 U.S.C. § 103 as being unpatentable over Perona et al. (US patent 6,044,165) in view of Taguchi et al. (US patent 5,748,808 cited previously), and further in view of Bennett et al. (US patent 5,051,736.)

The combination of Perona and Taguchi teaches the parental claims of the above listed claims. However, it does not teach the feature related with the recited illumination means.

Bennett teaches a writing pen for inputting hand-written information comprising:

-- an illumination means which projects light onto the surface. (light source 12 of Fig. 2)

It is desirable to be able to record hand-written information even under low-room-lighting condition. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to add an illumination means taught by Bennett to Taguchi's recording means in the system taught by the combination of Perona and Taguchi because the overall combination broadens application of the system in various lighting conditions.

7. Claims 16-18, 27-28, and 44-46 are rejected under 35 U.S.C. § 103 as being unpatentable over Perona et al. (US patent 6,044,165) in view of Taguchi et al. (US patent 5,748,808 cited previously), and further in view of Tano et al. (US patent 5,850,058.)

The combination of Perona and Taguchi teaches the parental claims of the above listed claims. However, it does not teach the features related to the recited (1) operational mode and (2) wireless communication.

Tano teaches a writing pen for inputting hand-written device comprising:

-- wherein said device is adjustable to an operational mode which it is adapted to record predefined information, preferably located an information carrier, by imaging the information



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with the aid plurality of images with partially overlapping contents; (column 5, lines 1-7; The switch 112 selects the operational mode for capturing images.)

-- wherein said device is adjustable an operational mode in which it is adapted to image an object located at a distance from the device; (column 13, lines 30-49; The pen can image an object at a distance and then transfer data back to a processor.)

-- a transceiver for wireless communication with an external unit. (column 13, lines 30-49; radio communication shown in Figs. 12-13)

It is desirable to have flexibility of (1) inputting various data including hand-written information and (2) processing the data locally and remotely. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Tano's teaching to include capability of recording various data and remote communication to the system taught by the combination of Perona and Taguchi, in which a switch for selecting operational mode and a radio communication are added, because the overall combination provides operational flexibility of the system in various environment.

### **Conclusion**

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen  
Examiner  
Art Unit 2624

May 17, 2004

